

TUCKER (W.G.)

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STATE BOARD OF HEALTH.

REPORT

OF

✓ WILLIS G. TUCKER, M.D., Ph. D.,

ANALYST OF DRUGS.

[EXTRACT FROM THE ELEVENTH ANNUAL REPORT.]

1890.



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LEWIS BALCH, M. D., *Secretary of the State Board of Health of New York:*

SIR.—The collection and examination of drugs from retail dealers in different parts of the State has been continued under your direction during the past year in substantially the same manner as heretofore. Five hundred and forty-three samples of twenty-six different pharmacopœial drugs, preparations and chemicals purchased from druggists in thirty-seven places have been examined and reported upon during the year. Reports have been made monthly and these have been accompanied by separate reports on each sample, stating the record number and pharmacopœial name of the article tested, name and place of business of dealer from whom purchased; date of purchase, amount called for, price paid and name of collector. The quality of the article, as determined by the examination made, has likewise been stated, the same standards being employed that have been heretofore used. Concerning these standards I quote from a previous report:

“Samples are classed as of ‘good quality’ when they fulfill the requirements of the United States pharmacopœia or fall below the same, only in some trifling and unimportant respect; of ‘fair quality’ if, while not fully up to the pharmacopœial standard, they are evidently neither intentionally adulterated nor decidedly below such standard, and of ‘inferior quality,’ if clearly adulterated or falsified, lacking in any important constituent, deficient in strength from improper manufacture, partial or complete decomposition or other causes, or containing an undue amount of

impurity. In some cases, through ignorance or intent, a wrong article has been sold or some inferior article of a nature similar to that called for has been substituted, and such samples have been classed under the head 'not as called for.' Articles like the diluted acids, possessing excessive strength, have been classed under that head. The reports have also stated the respects in which samples not of good quality have been found to be deficient or inferior, and have given such other particulars as have been deemed necessary in special cases." Not having been published elsewhere, these reports are now collected and embodied in this annual report.

All samples have been promptly examined, and especially in the case of articles which may deteriorate on keeping, and reports upon samples have generally been made within a month of the time of collection

SELECTION OF SAMPLES.

As has been stated in previous reports, the object of the work as now carried on is not so much the determination of the proportion of adulterated to pure drugs as found upon the market as to expose actual adulteration, substitution, sophistication and carelessness in the preparation of common drugs and pharmacopœial compounds and to inform the public and caution dealers. Therefore no attempt has been made to collect a great variety of articles, and such as are known to be seldom adulterated or of inferior quality have not been collected, but such substances have been selected as would best test the knowledge, accuracy and integrity of the dealer, and for this reason some rather unimportant drugs have been collected, though none but officinal (pharmacopœial) articles have been called for, and rarely used, or otherwise exceptional drugs have been omitted. Medicinal alkaloïds and preparations containing them constitute the department assigned to another analyst and such articles have therefore likewise been omitted in the collection of samples.

NOTIFICATION OF DEALERS.

Notices have, as heretofore, been promptly sent from the central office to all dealers whose samples have been found to be of inferior quality, warning them to desist from the sale of such articles and it is believed that these notices, which have in most cases been gratefully received and cheerfully complied with, have

had a most salutary effect in correcting various errors and abuses. In a number of cases dealers who have received these notices have written to ask for further information which has always promptly been given, or to explain, excuse and in a few cases to deny the sale of samples complained of but in no case has it been shown that any reasonable cause for complaint existed. The tables accompanying this report, for the second time, give the name and residence of all dealers from whom samples have been collected and state the quality of the article sold.

COLLECTION OF SAMPLES.

The 543 samples examined during the year were all collected under my direction by my assistant, Dr. A. G. Losee, of Albany, and in the following places: Albany, Amsterdam, Ballston, Canajoharie, Castleton, Catskill, Chatham, Cohoes, Coxsackie, Fishkill-on-Hudson, Fort Edward, Fort Plain, Frankfort, Glen Falls, Green Island, Herkimer, Hudson, Ilion, Kinderhook, Kingston, Lansingburgh, Little Falls, Matteawan, Mechanicville, Newburgh, Poughkeepsie, Rhinebeck, Sandy Hill, Saratoga Springs, Saugerties, Schenectady, St. Johnsville, Troy, Utica, Valatie, Waterford and West Troy. In every case a written order has been tendered and this order has given the official names of the articles called for and the amount desired. Trivial or common trade names have never been employed and no valid excuse can therefore be urged by the seller for error or substitution in filling orders so explicit. Proper questions that have been asked by dealers have always been answered by the collector and while the fact that the articles were required for State Board of Health examination has not been stated it has never been denied. All samples have been numbered and fully labeled (the original label if attached by the seller being also preserved) and kept a reasonable length of time for subsequent examination, if necessary, in any disputed case.

The following table shows the nature and number of the 543 samples examined and the places where purchased. It has again been observed that the price paid bears little relation to the quality of the article sold, the highest priced samples being frequently of inferior, and the cheapest, of satisfactory quality.

TABLE OF SAMPLES, ETC.

PLACE WHERE PURCHASED.

ARTICLES.	Albany.	Amsterdam.	Ballston.	Canajoharie.	Castleton.	Catskill.	Chatham.	Cohoes.	Coxsackie.	Fishkill-on-Hudson.	Fort Edward.	Fort Plain.	Frankfort.	Glens Falls.	Green Island.	Herkimer.	Hudson.	Thon.	Kinderhook.
Acetic acid, diluted	7	5	2	2	2	1	8	8	...	1	...	...	...	1	1	...	6	1	1
Bismuth, subnitrate of			2																
Cerium, oxalate of			1			1					2			3					1
Chloroform, purified			3	3	2	3	3	9		1									1
Ether, compound spirit of															2	3		3	
Ether, spirit of nitrous		6		3						1	3	3	2	3			1		
Ether, stronger			1		2		3		3										
Glycerine			2			2													
Hydrobromic acid, diluted			1	1							1						3		
Hydrochloric acid, diluted	8									1									
Iodoform			1								1								
Iron, syrup of Iodide of																			
Iron, tincture of chloride of									3										
Lime, solution of (lime water)						1													
Magnesia									3										
Nitric acid, diluted																			
Potassium, bromide of						3				1							4		
Potassium, Iodide of																			
Rhubarb (powdered)																			
Saffron (<i>Oreus</i>)						1		1		1							1		
Santonin											2								
Sedlitz powder	14																		
Sodium, bromide of										2		3		4			4		
Sulphur, precipitated			2			1							1			3		1	
Sulphur, washed					2														
Sulphuric acid, diluted		1		3		2	3						1	3	1	2	4	1	
Totals	29	12	15	9	8	15	12	27	9	8	9	6	4	18	4	8	32	6	3

TABLE OF SAMPLES, ETC.—(Concluded).

ARTICLES.	PLACE WHERE PURCHASED.																		Total number.
	Kingston.	Lansburg.	Little Falls.	Matteawan.	Mechanicville.	Newburgh.	Poughkeepsie.	Rhinebeck.	Sandy Hill.	Saratoga Springs.	Saugerties.	Schenectady.	St. Johnsville.	Troy.	Utica.	Valatie.	Waterford.	West Troy.	
Acetic acid, diluted.....	4	1	1	1	1	6	7	1	1	4	1	1	1	1	6	1	1	3	76
Bismuth, subnitrate of.....	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	5
Cerium, oxalate of.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	4
Chloroform, purified.....	3	3	2	2	2	4	2	3	1	3	1	1	1	1	15	2	2	3	13
Ether, compound spirit of.....	3	3	4	2	2	1	3	3	3	3	8	8	2	2	2	2	2	3	46
Ether, spirit of nitrous.....	3	3	4	2	2	1	3	3	3	3	1	1	1	1	2	2	2	3	68
Ether, stronger.....	4	2	2	2	1	1	3	3	3	1	1	1	1	1	1	1	1	1	30
Glycerine.....	2	2	2	2	1	1	3	3	3	1	1	1	1	1	3	1	1	1	5
Hydrobromic acid, diluted.....	3	3	2	1	1	3	6	6	1	1	1	1	1	1	12	1	1	1	12
Hydrochloric acid, diluted.....	3	3	2	1	1	3	6	6	1	1	1	1	1	1	2	2	2	2	28
Iodoform.....	2	2	2	1	1	3	6	6	1	1	1	1	1	1	2	2	2	2	2
Iron, syrup of Iodide of.....	2	2	2	1	1	3	6	6	1	1	1	1	1	1	2	2	2	2	2
Iron, tincture of chloride of.....	2	2	2	1	1	3	6	6	1	1	1	1	1	1	2	2	2	2	2
Lime, tincture of (lime water).....	2	2	2	1	1	3	6	6	1	1	1	1	1	1	2	2	2	2	2
Magnesia.....	2	2	2	1	1	3	6	6	1	1	1	1	1	1	2	2	2	2	3
Nitric acid, diluted.....	2	2	2	1	1	3	6	6	1	1	1	1	1	1	2	2	2	2	3
Nitric acid, diluted.....	2	2	2	1	1	3	6	6	1	1	1	1	1	1	2	2	2	2	3
Potassium, bromide of.....	1	1	1	1	1	5	2	2	1	1	1	1	1	1	1	1	1	1	9
Potassium, iodide of.....	1	1	1	1	1	5	2	2	1	1	1	1	1	1	1	1	1	1	15
Rhubarb (powdered).....	1	1	1	1	1	5	4	4	3	3	1	1	1	1	1	1	2	4	4
Saffron (<i>Orocus</i>).....	3	3	3	1	1	5	4	4	3	3	1	1	1	1	1	1	2	2	20
Santonin.....	3	3	3	1	1	5	4	4	3	3	1	1	1	1	1	1	2	2	4
Selditz powder.....	3	3	3	2	2	3	9	9	3	3	1	1	1	1	16	1	1	1	30
Sodium, bromide of.....	3	3	3	2	2	3	9	9	3	3	1	1	1	1	23	1	1	1	23
Sulphur, precipitated.....	4	4	4	2	2	7	10	10	3	3	1	1	2	2	4	1	1	1	37
Sulphur, washed.....	4	4	4	3	3	5	10	10	1	1	1	3	3	3	1	1	1	2	18
Sulphuric acid, diluted.....	4	4	4	3	3	5	10	10	1	1	1	7	7	15	1	1	1	1	70
Totals.....	21	21	10	12	6	44	52	12	6	12	6	18	5	31	28	4	12	9	543

METHODS OF ANALYSIS.

None but pharmacopœial articles having been collected, and the standard or quality prescribed by the Pharmacopœia being the legal standard to which articles included therein must conform, the pharmacopœial tests and analytical methods have been generally followed. In the examination of sweet spirit of nitre the method of A. H. Allen, of Sheffield, England ("Commercial Organic Analysis," 1885, vol. I, p. 150; also Phar. Jour. and Transactions, Feb. 21, 1885, p. 673 and Nov. 21, 1885, p. 440), as slightly modified and recommended by Dr. E. R. Squibb (Ephemeris, vol. III, p. 1195), has been followed, since the method laid down in the Pharmacopœia is not only troublesome, but inexact and generally untrustworthy. It is not claimed for Allen's process that it is *exact* in its results, and the author describes it as a "ready method of ascertaining with considerable approach to accuracy, the strength of such preparations," but it is undoubtedly the most convenient and precise method yet proposed for this particular purpose, and as Dr. Squibb says, in his very valuable and elaborate paper above referred to, it "really leaves little to be desired." It may here be remarked that sweet spirit of nitre made by the present U. S. P. process can never contain the quantity of ethyl nitrite claimed for it in the Pharmacopœia, and this fact has been taken into consideration in rating the samples examined. The U. S. P. process as given in that work from 1820 to 1860 inclusive, gave a product containing in reality about four per cent of real ethyl nitrite, while the process of 1870, according to Dr. Squibb, gave a product of about one-third the strength, and the present process yields a product containing about 2.83 per cent of real ethyl nitrite instead of the four per cent claimed for it. Dr. Squibb has perfected a process, which it is to be hoped will be adopted in the revision of the forthcoming Pharmacopœia of 1890, which gives a product containing five per cent of ethyl nitrite but it has not, as yet, been generally adopted. Many pharmacists neither make their own sweet spirit of nitre nor purchase from manufacturers, but prepare the article from the so-called "concentrated nitre," a preparation not recognized by the Pharmacopœia, by diluting it with alcohol. This may, or may not, according to circumstances, yield a good article and the subject will be again referred to when the samples examined are

described later on in this report. Concerning the other drugs examined it may be said that while exhaustive analyses have not often been necessary at least one quantitative determination has been made in most cases. The examination has in each case been sufficient to determine whether the article deviated in any material respect from the standard of quality prescribed in the Pharmacopœia and more than this has not been deemed necessary.

SUMMARY OF RESULTS.

Of the 543 samples examined there were classed as of

Good quality	218 or 40.2 per cent.
Fair quality	90 or 16.6 per cent.
Inferior quality	182 or 33.5 per cent.
Not as called for	25 or 4.6 per cent.
Excessive strength	28 or 5.1 per cent.

As stated in previous reports these percentages "by no means represent the proportions of good, bad or indifferent drugs on the market and on sale at the stores, since only those articles which were considered likely to be adulterated or known to be frequently of inferior quality were collected. Had samples of drugs and pharmaceutical preparations been selected at random the proportion of pure and good articles would have been very much larger." The samples wrongly sold and reported above as "not as called for" consisted chiefly of common safflower sold for real saffron, and the articles reported as of "excessive strength" were mainly diluted acids which were twenty-five per cent or upwards too strong; in some cases the concentrated acids being dispensed when the diluted were called for.

The following were the articles examined :

DILUTED ACETIC ACID. (*Acidum aceticum dilutum*, U. S. P.)

Seventy-six samples examined of which there were of good quality nineteen; fair, fourteen; inferior, thirty-four, and of excessive strength, nine. Diluted acetic acid should contain six per cent of absolute acid. Samples containing from 5.5 to 7.5 per cent have been rated as good; 4.5 to 5.4 per cent, fair; under 4.4 per cent, inferior, and over 7.5 per cent as of excessive strength. The samples examined varied from 0.80 to 29.80 per cent, and many of them had evidently been prepared without any regard to accuracy, and in some cases the practically undiluted

acid was sold. Omitting the nine samples of excessive strength the remaining sixty-seven averaged 4.5 per cent. While it is not expected that such preparations will be made with scientific precision, gross carelessness in their preparation is entirely excusable. Diluted acetic acid is employed in the preparation of "spirit of mindererus," and if it is below or above the proper strength this solution will be either too weak or too strong, neither of which conditions is desirable. The following table gives a description of each of the samples :

DILUTED ACETIC ACID, U. S. P.

Number of	Date of collection.	OF WHOM PURCHASED.	Where purchased.	Per cent.	Quality.
1871	December 30, 1889	W. Laycock.....	Kingston	4.00	Inferior.
1872	December 30, 1889	Van Deusen Bros.....	Kingston	6.40	Good.
1873	December 30, 1889	Cooper & Hardenburgh	Kingston	10.50	Excessive strength.
1874	December 30, 1889	Spore & Eltinge.....	Kingston	7.00	Good.
1898	December 31, 1889	Dykeman & Schofield	Catskill	4.50	Fair.
1924	January 29, 1890	C. P. Callen.....	Glens Falls	6.70	Good.
1952	January 29, 1890	C. F. Fish.....	Saratoga Springs	4.80	Fair.
1953	January 29, 1890	J. M. Colcord.....	Saratoga Springs	4.30	Inferior.
1954	January 29, 1890	T. H. S. Pennington.....	Saratoga Springs	3.20	Inferior.
1955	February 1, 1890	F. Menges.....	Saratoga Springs	3.80	Inferior.
1965	February 1, 1890	J. H. Westcott	Ballston	5.20	Fair.
1966	February 1, 1890	F. E. Mitchell	Ballston	2.40	Inferior.
1990	February 1, 1890	W. W. Spaulding.....	Lansingburgh	1.80	Inferior.
2012	March 28, 1890	Wardle & Son.....	Hudson	3.80	Inferior.
2013	March 28, 1890	J. M. Johnson.....	Hudson	5.20	Fair.
2014	March 28, 1890	B. Stedman	Hudson	3.90	Inferior.
2015	April 1, 1890	Link & Best.....	Hudson	4.30	Inferior.
2016	April 1, 1890	Van Tassel & Tobey.....	Hudson	5.50	Good.
2017	April 1, 1890	Rice Bros.....	Hudson	4.10	Inferior.
2040	April 1, 1890	Rice Bros. & Baringer	Chatham.....	5.20	Fair.
2041	April 1, 1890	W. H. Barnes	Chatham.....	7.00	Good.
2042	April 1, 1890	A. J. Fellows.....	Chatham.....	5.20	Fair.
2045	April 2, 1890	J. M. Hawley.....	Kinderhook	28.80	Excessive strength.
2049	April 2, 1890	P. B. Van Slyck	Valatie	3.40	Inferior.

DILUTED ACETIC ACID, U. S. P.— (Concluded).

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Number of sample.	Date of collection.	OF WHOM PURCHASED.	Where purchased.	Per cent.	Quality.
2056	April 2, 1890	J. Van Buren.....	Castleton	3.50	Inferior.
2057	April 2, 1890	C. W. Knowlton	Castleton	29.10	Excessive strength.
2106	April 23, 1890	Strickler & Schwarzl.....	Poughkeepsie	7.00	Good.
2107	April 23, 1890	Barnes Bros.....	Poughkeepsie	4.60	Fair.
2108	April 23, 1890	Doty & Humphrey.....	Poughkeepsie	3.60	Inferior.
2109	April 23, 1890	C. Westervelt	Poughkeepsie	5.80	Good.
2110	April 23, 1890	A. A. & J. W. Goetchus	Poughkeepsie	2.80	Inferior.
2111	April 23, 1890	Baldwin & Raymond	Poughkeepsie	0.80	Inferior.
2112	April 23, 1890	W. F. Turner	Poughkeepsie	2.40	Inferior.
2137	April 24, 1890	S. Mapes.....	Fishkill-on-Hudson.	27.60	Excessive strength.
2153	April 24, 1890	J. A. Joslin	Newburgh	7.00	Good.
2154	April 24, 1890	E. R. Post & Co	Newburgh	4.50	Fair.
2155	April 24, 1890	L. Y. Wiggins & Son.....	Newburgh	5.70	Good.
2156	April 24, 1890	J. G. Birch.....	Newburgh	3.80	Inferior.
2157	April 24, 1890	R. Ennis.....	Newburgh	4.20	Inferior.
2158	April 24, 1890	F. A. Grenzebach.....	Newburgh	4.00	Inferior.
2186	June 25, 1890	W. S. Elmendorf	Albany	3.70	Inferior.
2187	June 25, 1890	E. Hardin.....	Albany	6.20	Good.
2188	June 25, 1890	F. W. Hoffman	Albany	14.60	Excessive strength
2189	June 25, 1890	W. E. Masten	Albany	3.40	Inferior.
2190	June 25, 1890	G. E. Ferguson.....	Albany	5.70	Good.
2191	June 25, 1890	C. Van Loon	Albany	4.90	Fair.
2192	June 25, 1890	F. J. Smith.....	Albany	4.90	Fair.
2261	September 4, 1890	W. Howarth.....	Utica	2.80	Inferior.

2262	September 4, 1890	W. Blaikie	Utica	6.40	Good.
2263	September 4, 1890	J. W. Cone	Utica	5.50	Good.
2264	September 4, 1890	Luce & Plumb	Utica	4.50	Fair.
2265	September 4, 1890	J. B. McMillan	Utica	3.60	Inferior.
2266	September 4, 1890	T. Monahan	Utica	20.00	Excessive strength.
2281	September 4, 1890	Ogden & Downs	Ilion	5.30	Fair.
2301	September 5, 1890	J. W. Baker	Little Falls	18.80	Excessive strength.
2305	September 5, 1890	W. S. Bellinger	Canajoharie	2.60	Inferior.
2306	September 5, 1890	A. M. Hodge	Canajoharie	2.30	Inferior.
2319	September 6, 1890	C. Whyland	St. Johnsville	15.20	Excessive strength.
2328	October 14, 1890	G. H. Ingraham	Amsterdam	2.60	Inferior
2329	October 14, 1890	Bradford & Dickinson	Amsterdam	3.70	Inferior.
2330	October 14, 1890	E. W. Clark	Amsterdam	6.50	Good.
2331	October 14, 1890	Powell & Gilbert	Amsterdam	6.80	Good.
2332	October 14, 1890	N. C. Becker	Amsterdam	4.10	Inferior.
2370	November 5, 1890	H. M. Sweet	Cohoes	6.50	Good.
2371	November 5, 1890	D. S. Dodge	Cohoes	4.30	Inferior.
2372	November 5, 1890	M. McDermott	Cohoes	4.00	Inferior.
2373	November 5, 1890	W. Brown	Cohoes	4.00	Inferior.
2374	November 5, 1890	P. H. Spillane	Cohoes	3.00	Inferior.
2375	November 5, 1890	J. S. Ten Eyck	Cohoes	5.20	Fair.
2376	November 5, 1890	Archibald Bros	Cohoes	6.40	Good.
2377	November 5, 1890	D. Hermans	Cohoes	4.80	Fair.
2381	November 5, 1890	J. Higgins & Co.	Waterford	5.50	Good.
2391	November 10, 1890	S. Hutchison	West Troy	29.80	Excessive strength.
2392	November 10, 1890	J. E. Miller	West Troy	5.60	Good.
2393	November 10, 1890	F. H. Huntley	West Troy	4.10	Inferior.
2396	November 10, 1890	J. E. Grady	Green Island	4.20	Inferior.

SUBNITRATE OF BISMUTH — (*Bismuthi subnitrates*, U. S. P.).

Five samples examined and all found to be free from adulteration and of good quality as follows:

SUBNITRATE OF BISMUTH, U. S. P.

Number of sample.	Date of collection.	OF WHOM PURCHASED.	Where purchased.	Quality.
1973	February 1, 1890	W. G. Ball	Ballston	Good.
1974	February 1, 1890	E. G. Purdy	Ballston	Good.
1978	February 1, 1890	S. H. Hall	Mechanicville	Good.
1995	February 1, 1890	J. H. Adams	Lansingburgh	Good.
1996	February 1, 1890	A. C. Snyder	Lansingburgh	Good.

OXALATE OF CERIUM — (*Cerii Oxalas*, *U. S. P.*)

Four samples examined, all of which were of fair quality, though none of them conformed strictly to the pharmacopoeial requirements. Samples as follows:

OXALATE OF CERIUM, U. S. P.

Number of sample.	Date of collection.	OF WHOM PURCHASED.	Where purchased.	Quality.
1980	February 1, 1890	G. H. Whitney	Mechanicville	Fair.
1985	February 1, 1890	W. Barkman	Waterford	Fair.
1986	February 1, 1890	J. Higgins & Co	Waterford	Fair.
1998	February 1, 1890	H. S. Dickson	Lansingburgh	Fair.

PURIFIED CHLOROFORM — (*Chloroformum Purificatum*, U. S. P.)

Thirteen samples examined, of which there were of good quality, eight; fair, four; and inferior, one. The U. S. P. requires a specific gravity of 1.485-1.490 at 15 degrees C. (59 degrees F.). The quality of the purified chloroform now on sale is greatly superior to that formerly upon the market. The following table gives a description of the samples:

PURIFIED CHLOROFORM, U. S. P.

Number of sample.	Date of collection.	OF WHOM PURCHASED.	Where purchased.	Specific gravity at 59 degrees, Fahr.	Quality.
1868	December 30, 1889	C. F. Roth	Kingston	1.488	Good.
1869	December 30, 1889	E. W. Knapp	Kingston	1.485	Good.
1870	December 30, 1889	F. J. R. Clarke	Kingston	1.485	Good.
1893	December 31, 1889	J. H. Vosburgh	Catskill	1.486	Good.
1915	January 29, 1890	R. N. Peck	Glens Falls	1.488	Good.
1916	January 29, 1890	J. L. Dolan	Glens Falls	1.488	Fair.
1917	January 29, 1890	C. P. Callen	Glens Falls	1.490	Good.
1933	January 29, 1890	Flood & Kingsley	Sandy Hill	1.488	Inferior.
1942	January 29, 1890	F. B. Davis	Fort Edward	1.488	Fair.
1943	January 29, 1890	E. L. Potter	Fort Edward	1.488	Fair.
1951	January 29, 1890	T. H. S. Pennington	Saratoga Springs	1.490	Fair.
1960	February 1, 1890	J. H. Westcott	Ballston	1.488	Good.
2043	April 2, 1890	J. M. Hawley	Kinderhook	1.490	Good.

COMPOUND SPIRIT OF ETHER—(*Spiritus Aetheris Compositus*, U. S. P.).

Forty-six samples examined, of which five were of good quality, while there were of fair quality seven, and inferior thirty-four. Concerning this article, I quote from my last annual report :

“Compound spirit of ether or ‘Hoffman’s anodyne’ is frequently prescribed by physicians and often employed as a household remedy, and while an article of good quality can be procured from responsible manufacturers, or prepared without difficulty by the intelligent and careful pharmacist, the fact is that a spurious article answering to none of the requirements of the Pharmacopœia is generally sold in its stead, because it is cheaper. Hoffman’s anodyne is openly quoted at fifty-two cents a pound in a recent price-list published in a leading pharmaceutical journal, which is about one-quarter the price of the real article. This cheap, spurious and worthless article, obtained as a secondary product in the manufacture of ether, consists chiefly of alcohol, ether and water, with little or none of the ethereal oil upon which the virtue of the preparation largely depends. Dealers may urge that the sale of this spurious article as a household remedy to people who would complain of the price necessarily charged for a genuine article is excusable ; but without admitting this as a valid excuse for dispensing a fraudulent and worthless drug, it is evident that its sale in response to a physician’s prescription or written order, giving full title and specifying ‘U. S. P.,’ is entirely inexcusable and unwarranted and equally blameworthy, whether due to ignorance or cupidity. The habit of keeping two qualities of official drugs can not be too strongly condemned, but the results of the above examination would seem to show that many dealers, so far as this preparation is concerned, keep only one, and that a spurious article. When official preparations are called for they should be furnished by the dealer, or no sale made.”

The specific gravity of this preparation is not stated in the Pharmacopœia, but it should be about 0.796. As made by the process laid down in the Pharmacopœia of 1870, in which ether, and not stronger ether, was employed and more of the ethereal oil was used, it had a specific gravity of 0.815, *but the specific gravity alone is no criterion of quality.* The following table gives particulars concerning the samples examined :

COMPOUND SPIRIT OF ETHER.

Number of sample.	Date of collection.	OF WHOM PURCHASED.	Where purchased.	Specific gravity at 59° Fahr.	Quality.
1894	December 31, 1889	W. R. Post.	Catskill	0.865	Inferior.
1895	December 31, 1889	Dykeman & Schofield	Catskill	0.840	Inferior.
1896	December 31, 1889	Clarke & Whitmarsh	Catskill	0.804	Inferior.
1948	January 29, 1890	C. F. Fish.	Saratoga Springs.	0.810	Fair.
1949	January 29, 1890	J. M. Colcord.	Saratoga Springs.	0.803	Inferior.
1950	February 1, 1890	F. Menges	Saratoga Springs.	0.802	Inferior.
1962	February 1, 1890	F. E. Mitchell	Ballston	0.884	Inferior.
1963	February 1, 1890	W. G. Ball	Ballston	0.806	Inferior.
1964	February 1, 1890	E. G. Purdy	Ballston	0.896	Inferior.
1975	February 1, 1890	S. H. Hall	Mechanicville	0.795	Fair.
1976	February 1, 1890	G. H. Whitney.	Mechanicville	0.803	Good.
1981	February 1, 1890	W. Barkman.	Waterford	0.805	Inferior.
1982	February 1, 1890	J. Higgins & Co.	Waterford	0.808	Fair.
1987	February 1, 1890	W. W. Spaulding	Lansingburgh	0.820	Inferior.
1988	February 1, 1890	J. H. Adams	Lansingburgh	0.857	Inferior.
1989	February 1, 1890	H. S. Dickson.	Lansingburgh	0.887	Inferior.
2034	April 1, 1890	Rice Bros. & Baringer	Chatham.	0.815	Good.
2035	April 1, 1890	W. H. Barnes.	Chatham.	0.805	Inferior.
2036	April 1, 1890	A. J. Fellows.	Chatham.	0.800	Good.
2044	April 2, 1890	J. M. Hawley	Kinderhook	0.892	Inferior.
2052	April 2, 1890	J. Van Buren.	Castleton	0.806	Inferior.
2053	April 2, 1890	C. W. Knowlton	Castleton	0.875	Inferior.
2061	April 23, 1890	E. Holley, Jr.	Rhinebeck	0.810	Fair.
2062	April 23, 1890	B. N. Baker	Rhinebeck		Fair.

2063	April	23, 1890	Fero & Cotting..	Rhinebeck	0.812	Inferior.
2120	April	23, 1890	Wood & Tittamer.	Poughkeepsie	0.808	Good.
2121	April	23, 1890	Wilkinson, Roberts & Co.	Poughkeepsie	0.811	Inferior.
2129	April	24, 1890	B. F. Greene	Matteawan	0.826	Fair.
2130	April	24, 1890	E. H. Ellis	Matteawan	0.870	Inferior.
2134	April	24, 1890	P. Greene	Fishkill-on-Hudson.	0.807	Inferior.
2142	April	24, 1890	W. Doderer	Newburgh	0.816	Inferior
2143	April	24, 1890	I. C. Chapman	Newburgh	0.822	Fair.
2144	April	24, 1890	J. A. Joslin	Newburgh	0.847	Inferior.
2145	April	24, 1890	I. Caldwell	Newburgh	0.877	Inferior.
2361	November	5, 1890	H. M. Sweet	Cohoes	0.802	Inferior.
2362	November	5, 1890	D. S. Dodge	Cohoes	0.880	Inferior.
2363	November	5, 1890	M. McDermott	Cohoes	0.845	Inferior.
2364	November	5, 1890	W. Brown	Cohoes	0.874	Inferior.
2365	November	5, 1890	P. H. Spillane	Cohoes	0.845	Inferior.
2366	November	5, 1890	J. S. Ten Eyck	Cohoes	0.863	Inferior.
2367	November	5, 1890	J. H. Wilbur	Cohoes	0.880	Inferior.
2368	November	5, 1890	Archibald Bros.	Cohoes ..	0.798	Good.
2369	November	5, 1890	D. Hermans	Cohoes	0.870	Inferior.
2388	November	10, 1890	S. Hutchison	West Troy	0.894	Inferior.
2389	November	10, 1890	J. E. Miller	West Troy	0.870	Inferior.
2390	November	10, 1890	F. H. Huntley	West Troy	0.842	Inferior.

SPIRIT OF NITROUS ETHER (*Spiritus Aetheris Nitrosi*, U. S. P.).

As previously stated in this report, the present U. S. P. process yields a product containing but about 2.83 per cent of real ethyl nitrite, instead of four per cent as claimed. In rating the samples examined, therefore, since it would be unfair to demand a better product than the prescribed process can yield, samples containing 2.50 to 7.00 per cent have been classed as of "good quality," and those giving over seven per cent, and a few such were encountered being probably made from the so-called "concentrated nitre," and employing too little alcohol in its dilution, have been classed as of "excessive strength." Samples yielding from two to 2.49 per cent have been classed as of "fair," and those falling below two per cent as of "inferior quality." Sixty-eight samples collected in fifteen places were examined, of which *thirteen* only, or less than one-fifth of the total number were of good quality; two were of fair quality; two of excessive strength, and the remaining fifty-one samples were of inferior quality, many of them containing but a bare trace of the ethyl nitrite upon which the value of the preparation depends. Omitting the two samples of excessive strength the remaining ~~sixty-six~~ samples contained on an average, 1.40 per cent of ethyl nitrite. This is certainly a bad showing, though such a condition of affairs has long been known to exist by those who have investigated the matter. In a paper read before the New York State Pharmaceutical Association in 1885, Dr. R. G. Eccles, of Brooklyn, who had tested a large number of samples purchased from manufacturers and wholesale and retail dealers, says: "In spite of the valuable properties this agent possesses, it is slowly but surely sinking into disuse and disrepute. The treatment it receives at the hands of wholesale and retail druggists is responsible for this. The statement about to be made in this connection will probably startle you and to some appear wildly erroneous. It is given, however, as a candid opinion, based upon substantial facts. *It is the merest accident if a physician gets what he orders in any part of the United States when he writes for an ounce or any other definite amount of Spiritus Aetheris Nitrosi.*" I am of opinion that this is no exaggeration, and it is certainly much to be deplored that such a condition of things should exist. It is not denied that the manufacture of this article is troublesome, nor that the preparation is one which must be well kept and carefully dispensed, since it unquestionably

deteriorates by age and exposure. Nevertheless, an article which would be classed as good by the standard we have adopted, as above described, can be purchased in the market or prepared by the intelligent and careful pharmacist, and the sale of an inferior or decomposed article is entirely inexcusable and may generally be attributed either to the purchase of the cheapest obtainable goods or to gross carelessness either in the preparation or preservation of the article in question. A list of the samples examined is appended :

SPIRIT OF NITROUS ETHER, U. S. P.

Number of sample.	Date of collection.	OF WHOM PURCHASED.	Where purchased.	Per cent ethyl nitrite.	Quality.
2246	September 4, 1890	Lake & Coon.....	Utica	5.87	Good.
2247	September 4, 1890	G. O. Pennock.....	Utica	2.58	Good.
2248	September 4, 1890	G. B. Williams	Utica	1.28	Inferior.
2249	September 4, 1890	W. Howarth	Utica	0.27	Inferior.
2250	September 4, 1890	G. L. Hill	Utica	1.19	Inferior.
2251	September 4, 1890	W. Blaikie	Utica	0.82	Inferior.
2252	September 4, 1890	J. W. Cone	Utica	0.90	Inferior.
2253	September 4, 1890	Luce & Plumb	Utica	1.22	Inferior.
2254	September 4, 1890	Howarth & Ballard	Utica	5.32	Good.
2255	September 4, 1890	J. H. Sheehan & Co.	Utica	0.38	Inferior.
2256	September 4, 1890	J. B. McMillan	Utica	0.65	Inferior.
2257	September 4, 1890	F. T. Ray & Co.	Utica	2.57	Good.
2258	September 4, 1890	C & H. H. Hamilton	Utica	0.21	Inferior.
2259	September 4, 1890	T. Monahan	Utica	0.06	Inferior.
2260	September 4, 1890	F. J. Gschwind	Utica	0.45	Inferior.
2274	September 4, 1890	Kellogg & Carrier	Frankfort	8.06	Excessive strength.
2275	September 4, 1890	E. Steele	Frankfort	0.40	Inferior.
2278	September 4, 1890	Ogden & Downs	Ilion	1.65	Inferior.
2279	September 4, 1890	D. E. Walker	Ilion	3.90	Good.
2280	September 4, 1890	E. M. Draper	Ilion	1.41	Inferior.
2284	September 5, 1890	L. H. Hollon	Herkimer	0.24	Inferior.
2285	September 5, 1890	C. W. Palmer & Co.	Herkimer	0.12	Inferior.
2286	September 5, 1890	Prowse & Thomson	Herkimer	Trace.	Inferior.
2292	September 5, 1890	H. G. Babcock & Co.	Little Falls	0.51	Inferior.

2293	September 5, 1890	J. H. Smith	Little Falls	0.06	Inferior.
2294	September 5, 1890	A. Woolever	Little Falls	1.08	Inferior.
2295	September 5, 1890	J. V. Hemstreet	Little Falls	0.48	Inferior.
2302	September 5, 1890	W. S. Bellinger	Canajoharie	0.57	Inferior.
2303	September 5, 1890	Dyert & Wohlgemuth	Canajoharie	1.60	Inferior.
2304	September 5, 1890	A. M. Hodge	Canajoharie	0.30	Inferior.
2311	September 6, 1890	Martin & Shuman	Fort Plain	Trace.	Inferior.
2312	September 6, 1890	E. S. Gregory	Fort Plain	Trace.	Inferior.
2313	September 6, 1890	Devoe & Shumway	Fort Plain	Trace.	Inferior.
2317	September 6, 1890	S. Walrath	St. Johnsville	7.88	Excessive strength.
2318	September 6, 1890	C. Whyland	St. Johnsville	Trace.	Inferior.
2322	October 14, 1890	G. H. Ingraham	Amsterdam	1.53	Inferior.
2323	October 14, 1890	Bradford & Dickinson	Amsterdam	0.51	Inferior.
2324	October 14, 1890	E. W. Clark	Amsterdam	1.26	Inferior.
2325	October 14, 1890	Powell & Gilbert	Amsterdam	0.56	Inferior.
2326	October 14, 1890	N. C. Becker	Amsterdam	4.80	Good.
2327	October 14, 1890	C. W. Striker	Amsterdam	0.15	Inferior.
2334	October 14, 1890	Wm. Sauter	Schenectady	4.71	Good.
2335	October 14, 1890	G. Steinfuhrer	Schenectady	1.41	Inferior.
2336	October 14, 1890	W. T. Hanson & Co	Schenectady	4.62	Good.
2337	October 14, 1890	A. T. Veeder & Son	Schenectady	2.99	Good.
2338	October 14, 1890	N. H. Kittle	Schenectady	Trace.	Inferior.
2339	October 14, 1890	Van Zandt & Shaffer	Schenectady	0.45	Inferior.
2340	October 14, 1890	H. A. Kerste	Schenectady	6.48	Good.
2341	October 14, 1890	C. H. Horstmann	Schenectady	1.28	Inferior.
2352	November 5, 1890	H. M. Sweet	Cohoes	1.28	Inferior.
2353	November 5, 1890	D. S. Dodge	Cohoes	Trace.	Inferior.
2354	November 5, 1890	M. McDermott	Cohoes	2.18	Fair.
2355	November 5, 1890	W. Brown	Cohoes	1.28	Inferior.
2356	November 5, 1890	P. H. Spillane	Cohoes	0.75	Inferior.
2357	November 5, 1890	J. S. Ten Eyck	Cohoes	2.40	Fair.

SPIRIT OF NITROUS ETHER, U. S. P.—(Concluded).

Number of sample.	Date of collection.	OF WHOM PURCHASED.	Where purchased.	Per cent ethyl nitrite.	Quality.
2358	November 5, 1890	J. H. Wilbur	Cohoes	0.37	Inferior.
2359	November 5, 1890	Archibald Bros.	Cohoes	1.54	Inferior.
2360	November 5, 1890	D. Hermans	Cohoes	1.20	Inferior.
2379	November 5, 1890	J. Higgins & Co	Waterford	Trace.	Inferior.
2380	November 5, 1890	M. Barkman & Co	Waterford	2.68	Good.
2385	November 10, 1890	G. Hutchison	West Troy	Trace.	Inferior.
2386	November 10, 1890	J. E. Miller	West Troy	0.33	Inferior.
2387	November 10, 1890	F. H. Huntley	West Troy	0.07	Inferior.
2394	November 10, 1890	J. E. Grady	Green Island	1.88	Inferior.
2395	November 10, 1890	M. A. Barnhart	Green Island	Trace.	Inferior.
2398	November 10, 1890	W. W. Spaulding	Lansingburgh	1.40	Inferior.
2399	November 10, 1890	J. H. Adams	Lansingburgh	4.58	Good.
2400	November 10, 1890	H. W. Wood	Lansingburgh	4.17	Good.

STRONGER ETHER—(*Aether Fortior*, U. S. P.).

Thirty samples examined, of which there were of good quality, seventeen; inferior, twelve; while one consisted of a mixture of chloroform and alcohol.

Two qualities of ether are recognized by the U. S. P., viz., "ether," specific gravity about 0.750, and containing about twenty-six per cent of alcohol, and "stronger ether," with a specific gravity not higher than 0.725, at fifteen degrees C., and containing about six per cent of alcohol. The term "sulphuric ether" is not recognized in the Pharmacopœia. Stronger ether is generally used as an anæsthetic, and ought always to be kept in stock by the pharmacist. When it is called for by its officinal name in full it ought always be supplied, and the substitution of common ether or the so-called "washed ether" of the trade is entirely inexcusable, and betokens great carelessness or ignorance on the part of the seller. Particulars concerning these samples are appended:

STRONGER ETHER, U. S. P.

Number of	Date of collection.	OF WHOM PURCHASED.	Where purchased.	Specific gravity at 59° Fahr.	Quality.
1864	December 30, 1889	W. Laycock	Kingston	0.723	Good.
1865	December 30, 1889	Van Deusen Bros	Kingston	0.723	Good.
1866	December 30, 1889	Cooper & Hardenburgh	Kingston	0.724	Good.
1867	December 30, 1889	Spore & Eltinge	Kingston	0.755	Inferior.
1909	December 31, 1889	A. V. D. Collier	Coxsackie	0.726	Good.
1910	December 31, 1889	J. C. McClure	Coxsackie	0.723	Good.
1911	December 31, 1889	Marsh & Co.	Coxsackie	0.723	Good.
1918	January 29, 1890	Ames & Baldwin	Glens Falls	0.723	Good.
1919	January 29, 1890	Leggett & Bush	Glens Falls	0.726	Good.
1920	January 29, 1890	Sanford & Pearsall	Glens Falls	0.752	Inferior.
1939	January 29, 1890	F. B. Davis	Fort Edward	0.723	Good.
1940	January 29, 1890	E. L. Potter	Fort Edward	0.745	Inferior.
1941	January 29, 1890	Coutryman & Wing	Fort Edward	0.743	Inferior.
1961	February 1, 1890	W. J. Redmond	Ballston	0.723	Good.
2008	March 28, 1890	Wardle & Son	Hudson	0.743	Inferior.
2031	April 1, 1890	Rice Bros. & Baringer	Chatham	0.724	Good.
2032	April 1, 1890	W. H. Barnes	Chatham	0.724	Good.
2033	April 1, 1890	H. J. Fellows	Chatham	0.725	Good.
2050	April 2, 1890	J. Van Buren	Castleton	0.760	Inferior.
2051	April 2, 1890	C. W. Knowlton	Castleton	0.726	Good.
2058	April 23, 1890	E. Holley, Jr.	Rhinebeck	0.756	Inferior.
2059	April 23, 1890	B. N. Baker	Rhinebeck	0.725	Good.
2060	April 23, 1890	Fero & Coting	Rhinebeck	0.755	Inferior.

2080	April	23, 1890	A. Clark	Poughkeepsie	0.746	Inferior.
2081	April	23, 1890	Humphrey & Forman	Poughkeepsie	0.750	Inferior.
2082	April	23, 1890	E. C. Bolton	Poughkeepsie		Consists of a mixture of chloroform and alcohol.
2125	April	24, 1890	H. B. Bevier	Matteawan	0.764	Inferior.
2126	April	24, 1890	B. F. Greene	Matteawan	0.726	Good.
2135	April	24, 1890	S. Mapes	Fishkill-on-Hudson.	0.752	Inferior.
2152	April	24, 1890	W. Doderer	Newburgh	0.725	Good.

GLYCERIN — (*Glycerinum*, U. S. P.)
 Five examples examined, all of good quality, as follows:

GLYCERIN, U. S. P.

Number of sample.	Date of Collection.	FROM WHOM PURCHASED.	Where purchased.	Quality.
1971	February 1, 1890	W. G. Ball	Ballston	Good.
1972	February 1, 1890	E. G. Purdy	Ballston	Good.
1977	February 1, 1890	S. H. Hall	Mechanicville	Good.
1991	February 1, 1890	J. H. Adams	Lansingburgh	Good.
1992	February 1, 1890	A. C. Snyder	Lansingburgh	Good.

DILUTED HYDROBROMIC ACID — (*Acidum Hydrobromicum Dilutum*
U. S. P.)

Twelve samples examined, of which there were of good quality, six ; fair, one ; inferior, three ; excessive strength, one, and one consisted of diluted hydrochloric acid of good quality. The Pharmacopœia requires ten per cent of the absolute acid and the same for diluted hydrochloric and nitric acids. In the case of diluted sulphuric acid ten per cent of the officinal sulphuric acid is required. In rating these acids those containing from nine to 12.5 per cent have been classed as good ; 7.5 to 8.9, fair ; below 7.5 inferior, and over 12.5 excessive strength. These samples varied between 0.60 and 14.40 per cent. Omitting the sample wrongly sold and that of excessive strength, the remaining ten averaged 8.41 per cent, but the individual samples will be seen, by reference to the following table, to present wide variations :

DILUTED HYDROBROMIC ACID, U. S. P

Number of sample.	Date of collection.	OF WHOM PURCHASED.	Where purchased.	Per cent.	Quality.
1899	December 31, 1889	Dykeman & Schofield.....	Catskill	12.20	Good.
1900	December 31, 1889	Clarke & Whitmarsh.....	Catskill	0.60	Inferior.
1947	January 29, 1890	Contryman & Wing.....	Fort Edward.....	11.60	{ Consists of diluted hydrochloric acid; error in sale.
1967	February 1, 1890	W. J. Redmond....	Ballston	11.60	
2009	March 28, 1890	J. M. Johnson.....	Hudson.....	10.60	Good.
2010	March 28, 1890	B. Stedman	Hudson.....	8.00	Fair.
2011	April 1, 1890	Van Tassel & Tobey	Hudson	11.00	Good.
2151	April 24, 1890	I. C. Chapman....	Newburgh	12.30	Good.
2267	September 4, 1890	Howarth & Ballard	Utica	3.60	Inferior.
2268	September 4, 1890	J. H. Sheehan & Co.....	Utica	11.60	Good.
2269	September 4, 1890	F. T. Ray & Co.....	Utica	2.60	Inferior.
2310	September 5, 1890	Dygert & Wohlgenuth.....	Canajoharie	14.40	Excessive strength.

DILUTED HYDROCHLORIC ACID — (*Acidum Hydrochloricum Dilutum*, U. S. P.).

Twenty-eight samples examined, of which fifteen were of good quality; six were fair; six of inferior and one of excessive strength. The Pharmacopœia requires ten per cent of the absolute acid. These samples ranged from 3.00 to 31.40 per cent, and, omitting the sample of excessive strength, averaged 8.5 per cent. For standard employed in rating these samples see under diluted hydrobromic acid. The samples are described in the following table:

DILUTED HYDROCHLORIC ACID, U. S. P.

Number of	Date of collection.	OF WHOM PURCHASED.	Where purchased.	Per cent.	Quality.
1875	December 30, 1889	C. F. Roth.....	Kingston	11.20	Good.
1876	December 30, 1889	E. W. Knapp	Kingston	8.40	Fair.
1877	December 30, 1889	F. J. R. Clarke	Kingston	10.60	Good.
2004	March 28, 1890	Wardle & Son	Hudson	3.00	Inferior.
2005	March 28, 1890	J. M. Johnson	Hudson	8.70	Good.
2006	March 28, 1890	B. Stedman	Hudson	3.30	Inferior.
2007	April 1, 1890	Van Tassel & Tobey	Hudson	9.40	Good.
2097	April 23, 1890	C. S. Bowne	Poughkeepsie	31.40	Excessive strength.
2098	April 23, 1890	Strickler & Schwartz	Poughkeepsie	10.20	Good.
2099	April 23, 1890	Wood & Tittamer	Poughkeepsie	9.50	Good.
2100	April 23, 1890	A. A. & J. W. Goetchus	Poughkeepsie	7.00	Inferior.
2101	April 23, 1890	Baldwin & Raymond	Poughkeepsie	8.20	Fair.
2102	April 23, 1890	W. F. Turner	Poughkeepsie	4.60	Inferior.
2132	April 24, 1890	E. H. Ellis	Matteawan	8.10	Fair.
2136	April 24, 1890	P. Greene	Fishkill-on-Hudson.	8.70	Fair.
2159	April 24, 1890	J. R. Post & Co	Newburgh	8.30	Fair.

DILUTED HYDROCHLORIC ACID, U. S. P.—(Concluded).

Number of sample.	Date of collection.	OF WHOM PURCHASED.	Where purchased.	Percent.	Quality.
2160	April 24, 1890	L. Y. Wiggins & Son	Newburgh	11.00	Good.
2161	April 24, 1890	R. Ennis	Newburgh	8.20	Fair.
2193	June 25, 1890	Dalrymple & Warner	Albany	10.00	Good.
2194	June 25, 1890	D. Donnelly	Albany	9.90	Good.
2195	June 25, 1890	S. C. Hodgkins	Albany	10.40	Good.
2196	June 25, 1890	A. B. Husted & Co.	Albany	10.70	Good.
2197	June 25, 1890	C. E. Lloyd	Albany	10.10	Good.
2198	June 25, 1890	A. R. Miller	Albany	10.10	Good.
2199	June 25, 1890	J. DeP. Townsend	Albany	10.60	Good.
2200	June 25, 1890	F. J. Smith	Albany	10.60	Good.
2299	September 5, 1890	J. W. Baker	Little Falls	4.10	Inferior.
2300	September 5, 1890	J. H. Smith	Little Falls	6.20	Inferior.

IODOFORM — (*Iodoformum*, U. S. P.).

Two samples examined, both of which were of good quality, as shown below :

IODOFORM, U. S. P.

Number of sample.	Date of collection.	FROM WHOM PURCHASED.	Where purchased.	Quality.
1944	January 29, 1890	E. L. Potter.....	Fort Edward.....	Good.
1968	February 1, 1890	W. J. Redmond.....	Ballston	Good.

SYRUP OF IODIDE OF IRON — (*Syrupus Ferri Iodidi*, U. S. P.).

Two samples examined, both of fair quality, as shown below.

SYRUP OF IODIDE OF IRON, U. S. P.

Number of sample.	Date of collection.	OF WHOM PURCHASED.	Where purchased.	Quality.
1885	December 30, 1889	A. Rightmyer	Saugerties	Fair.
1886	December 30, 1889	W. E. Van Buskirk	Saugerties	Fair.

TINCTURE OF CHLORIDE OF IRON — (*Tinctura Ferri Chloridi*, U. S. P.).

Three samples examined, two of which were of good and one of fair quality, as follows:

TINCTURE OF CHLORIDE OF IRON, U. S. P.

Number of sample.	Date of collection.	OF WHOM PURCHASED.	Where purchased.	Quality.
1906	December 31, 1889	A. V. D. Collier.....	Coxsackie.....	Good.
1907	December 31, 1889	J. C. McClure.....	Coxsackie.....	Good.
1908	December 31, 1889	Marsh & Co.....	Coxsackie.....	Fair.

SOLUTION OF LIME — "LIME WATER" — (*Liquor Calcis, U. S. P.*).

Three samples examined, of which one was of good and two of fair quality as follows:

LIME WATER, U. S. P.

Number of sample.	Date of collection.	OF WHOM PURCHASED.	Where purchased.	Quality.
1887	December 30, 1889	A. Rightmyer	Saugerties	Fair.
1888	December 30, 1889	W. E. Van Buskirk	Saugerties	Good.
1897	December 31, 1889	W. R. Post.....	Catskill	Fair.

MAGNESIA — (*Magnesia*, *U. S. P.*).

Thirteen samples examined, of which but one was of good quality, while seven were fair, four inferior, and one consisted of carbonate of magnesium. This article is frequently carelessly kept and therefore often largely carbonated by exposure to air. Sometimes the carbonate is ignorantly sold when magnesia is called for. Magnesia should be kept in well-closed vessels. A list of the samples examined is appended :

MAGNESIA, *U. S. P.*

Number of sample.	Date of collection.	OF WHOM PURCHASED.	Where purchased.	Quality.
1889	December 30, 1889	A. Rightmyer	Saugerties	Consists of carbonate. Error in sale.
1890	December 30, 1889	W. E. Van Buskirk	Saugerties	Fair.
1912	December 31, 1889	A. V. D. Collier	Coxsackie	Inferior.
1913	December 31, 1889	J. C. McClure	Coxsackie	Good.
1914	December 31, 1889	Marsh & Co	Coxsackie	Fair.
2113	April 23, 1890	Strickler & Schwartz	Poughkeepsie	Fair.
2114	April 23, 1890	Barnes Bros.	Poughkeepsie	Inferior.
2115	April 23, 1890	C. Westervelt	Poughkeepsie	Fair.
2116	April 23, 1890	Wilkinson, Roberts & Co	Poughkeepsie	Fair.
2117	April 23, 1890	A. A. & J. W. Goetchus	Poughkeepsie	Inferior.
2118	April 23, 1890	Baldwin & Raymond	Poughkeepsie	Fair.
2119	April 23, 1890	W. F. Turner	Poughkeepsie	Inferior.
2172	April 24, 1890	D. Kingston	Newburgh	Fair.

BROMIDE OF POTASSIUM—(*Potassi Bromidum*, U. S. P.).

Nine samples examined, of which six were of good and three possessed too great alkalinity or contained too decided traces of the carbonate, bromate or iodide, and were rated as fair. A list of the samples examined is appended:

BROMIDE OF POTASSIUM, U. S. P.

Number of sample.	Date of collection.	OF WHOM PURCHASED.	Where purchased.	Quality.
1929	January 29, 1890	R. N. Peck	Glens Falls	Fair.
1930	January 29, 1890	Ames & Baldwin	Glens Falls	Fair.
1931	January 29, 1890	Leggett & Bush	Glens Falls	Good.
1932	January 29, 1890	J. L. Dolan	Glens Falls	Fair.
1935	January 29, 1890	Smalley & Co.	Sandy Hill	Good.
1997	February 1, 1890	A. C. Snyder	Lansingburgh	Good.
2047	April 2, 1890	P. B. Van Slyck	Valatie	Good.
2162	April 24, 1890	T. Merritt	Newburgh	Good.
2163	April 24, 1890	D. Kingston	Newburgh	Good.

DILUTED NITRIC ACID — (*Acidum Nitricum Dilutum*, U. S. P.).

Three samples tested, all of which were of good quality. The Pharmacopœia requires ten per cent of the absolute acid. The percentage strengths of the samples examined are given in the following table and varied from 9.50 to 12.50 per cent:

DILUTED NITRIC ACID, U. S. P.

Number of sample.	Date of collection.	OF WHOM PURCHASED.	Where purchased.	Per cent.	Quality.
2103	April 23, 1890	C. S. Bowne	Poughkeepsie	9.50	Good.
2104	April 23, 1890	Strickler & Schwartz	Poughkeepsie	12.50	Good.
2105	April 23, 1890	Wood & Tittamer	Poughkeepsie	9.90	Good.

IODIDE OF POTASSIUM — (*Potassii Iodidum*, U. S. P.)

Fifteen samples examined, of which three were of good quality, eleven of fair and one of inferior quality, the latter classes either possessing too great alkalinity or containing too decided traces of the iodate, sulphate or other impurities. A list of the samples is appended:

IODIDE OF POTASSIUM, U. S. P.

Number of	Date of collection.	OF WHOM PURCHASED.	Where purchased.	Quality.
1901	December 31, 1889	J. H. Vosburgh.....	Catskill.....	Fair.
1902	December 31, 1889	W. R. Post.....	Catskill.....	Fair.
1903	December 31, 1889	W. L. DuBois.....	Catskill.....	Fair.
2027	April 1, 1890	W. J. Miller.....	Hudson.....	Fair.
2028	April 1, 1890	Link & Best.....	Hudson.....	Fair.
2029	April 1, 1890	Rossmann & McKinstry.....	Hudson.....	Inferior.
2030	April 1, 1890	Rice Bros.....	Hudson.....	Fair.
2048	April 2, 1890	P. B. Van Slyck.....	Valatie.....	Good.
2133	April 24, 1890	E. H. Ellis.....	Matteawan.....	Fair.
2140	April 24, 1890	P. Greene.....	Fishkill-on-Hudson.....	Fair.
2164	April 24, 1890	T. Merritt.....	Newburgh.....	Good.
2165	April 24, 1890	E. R. Post & Co.....	Newburgh.....	Fair.
2166	April 24, 1890	L. Y. Wiggins & Son.....	Newburgh.....	Fair.
2167	April 24, 1890	D. Kingston.....	Newburgh.....	Good.
2168	April 24, 1890	R. Ennis.....	Newburgh.....	Fair.

RHUBARB—(*Rheum*, U. S. P.).

Four samples of the powdered drug were examined, of which three were of good and one of fair quality, as follows:

RHUBARB (POWDERED), U. S. P.

Number of sample.	Date of collection.	OF WHOM PURCHASED.	Where purchased.	Quality.
1979	February 1, 1890	G. H. Whitney	Mechanicville	Good.
1983	February 1, 1890	W. Barkman	Waterford	Good.
1984	February 1, 1890	J. Higgins & Co	Waterford	Good.
1994	February 1, 1890	H. S. Dickson	Lansingburgh	Fair.

SAFFRON — (*Crocus*, U. S. P.)

Twenty samples examined of which five were of good and one of fair quality while fourteen consisted of "safflower" (*Carthamus tinctorius*). Concerning the substitution of this article for saffron I quote from a previous report: "The saffron of the Pharmacopœia consists of the stigmas of *Crocus sativus* and is often known in the trade as Spanish saffron or true saffron. No other kind of saffron is recognized in the Pharmacopœia and when it is called for by its officinal name no other article should be substituted for it. Safflower is very cheap and is often called for, verbally, as a domestic remedy under the name of saffron, but when the demand is for the pharmacopœial drug it should not be dispensed. At all events, if offered in its stead, the substitution should be explained, but no such explanation was made in any of the above cases." A description of the samples is appended:

SAFFRON (*Crocus*), U. S. P.

Number of sample.	Date of collection.	OF WHOM PURCHASED.	Where purchased.	Quality.
1882	December 30, 1889	C. F. Roth	Kingston	Good.
1883	December 30, 1889	E. W. Knapp	Kingston	Consists of safflower; error in sale.
1884	December 30, 1889	F. J. R. Clarke	Kingston	Fair.
1905	December 31, 1889	Clarke & Whitmarsh	Catskill	Consists of safflower; error in sale.
2026	April 1, 1890	W. J. Miller	Hudson	Consists of safflower; error in sale.
2067	April 23, 1890	E. Holley, Jr.	Rhinebeck	Consists of safflower; error in sale.
2068	April 23, 1890	B. N. Baker	Rhinebeck	Consists of safflower; error in sale.
2069	April 23, 1890	Fero & Cotting	Rhinebeck	Consists of safflower; error in sale.
2092	April 23, 1890	Humphrey & Forman	Poughkeepsie	Consists of safflower; error in sale.
2093	April 23, 1890	E. C. Bolton	Poughkeepsie	Consists of safflower; error in sale.
2094	April 23, 1890	Wood & Tittamer	Poughkeepsie	Good.
2095	April 23, 1890	Doty & Humphrey	Poughkeepsie	Good.
2131	April 24, 1890	H. B. Bevier	Matteawan	Consists of safflower; error in sale.
2139	April 24, 1890	S. Mapes	Fishkill-on-Hudson	Consists of safflower; error in sale.
2180	April 24, 1890	J. A. Joslin	Newburgh	Consists of safflower; error in sale.
2181	April 24, 1890	E. R. Post & Co.	Newburgh	Consists of safflower; error in sale.
2182	April 24, 1890	L. Y. Wiggins & Son	Newburgh	Consists of safflower; error in sale.
2183	April 24, 1890	J. G. Birch	Newburgh	Consists of safflower; error in sale.
2184	April 24, 1890	R. Ennis	Newburgh	Good.
2378	November 5, 1890	J. H. Wilbur	Cohoes	Consists of safflower; error in sale.

SANTONIN — (*Santoninum*, U. S. P.).

Four samples examined, all of good quality, as follows:

SANTONIN, U. S. P.

Number of sample.	Date of collection.	OF WHOM PURCHASED.	Where purchased.	Quality.
1936	January 29, 1890	Flood & Kingsley.....	Sandy Hill.....	Good.
1937	January 29, 1890	Smalley & Co.....	Sandy Hill.....	Good.
1945	January 29, 1890	F. B. Davis.....	Fort Edward.....	Good.
1946	January 29, 1890	Contryman & Wing.....	Fort Edward.....	Good.

COMPOUND EFFERVESCING POWDER—(*Pulvis Effervescens
Compositus, U. S. P.*).

Thirty samples examined, of which fifteen were of good weight and quality ; six were rated as fair, and nine as inferior. Seidlitz powders are generally measured and not weighed, and while it is by no means necessary that they be made with great accuracy, the contents of the papers should certainly not vary to exceed twenty per cent. A firm in Brooklyn advertise in a leading pharmaceutical journal seidlitz powders denominated "Regular" which contain but two drachms of the seidlitz mixture, instead of two drachms and two scruples, in the blue paper. This is just twenty-five per cent short weight. Particulars concerning the samples examined are appended :

SEIDLITZ POWDER (U. S. P.).

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Number of Sample.	Date of collection.	OF WHOM PURCHASED.	Where purchased.	Quality.
2201	June 25, 1890	W. S. Elmendorf.....	Albany	Good weight and quality.
2202	June 25, 1890	Dalrymple & Warner..	Albany	Good weight and quality.
2203	June 25, 1890	D. Donnelly.....	Albany	Blue paper 17.5 per cent short weight; fair.
2204	June 25, 1890	E. Hardin.....	Albany	Good weight and quality.
2205	June 25, 1890	S. C. Hodgkins	Albany	Good weight and quality.
2206	June 25, 1890	A. B. Husted & Co ..	Albany	Good weight and quality.
2207	June 25, 1890	F. W. Hoffman	Albany	Blue paper 38.7 per cent short weight; inferior.
2208	June 25, 1890	C. E. Lloyd	Albany	Good weight and quality.
2209	June 25, 1890	W. E. Masten	Albany	Good weight and quality.
2210	June 25, 1890	A. R. Miller	Albany	Blue paper 13.7 per cent short weight; fair.
2211	June 25, 1890	J. DeP. Townsend ..	Albany	Good weight and quality.
2212	June 25, 1890	C. Van Loon	Albany	Blue paper 21.9 per cent short weight; inferior
2213	June 25, 1890	J. Bandorf	Albany	Good weight and quality.
2214	June 25, 1890	F. J. Smith	Albany	Good weight and quality.
2230	June 27, 1890	H. Gnadendorff	Troy	Good weight and quality.
2231	June 27, 1890	R. H. Starbuck	Troy	Good weight and quality.
2232	June 27, 1890	Drake & Moffitt.....	Troy	Blue paper 41.2 and white paper 28.5 per cent short weight; inferior.
2233	June 27, 1890	G. W. Holcomb	Troy ..	Blue paper 38.1 per cent short weight; inferior.
2234	June 27, 1890	F. M. Brower.....	Troy	Good weight and quality.
2235	June 27, 1890	Moncrief & Francis ..	Troy	Blue paper 20.6 and white paper 42.9 per cent short weight; inferior.
2236	June 27, 1890	E. W. Stoddard.....	Troy	Blue paper 53.1 per cent short weight; inferior.

2237	June	27, 1890	L. Burton & Co.....	Troy	Blue paper 13.8 per cent short weight; fair.
2238	June	27, 1890	H. Schneider	Troy	Blue paper 10 and white paper 17 per cent short weight; fair.
2239	June	27, 1890	C. H. Wiberley	Troy	Good weight and quality.
2240	June	27, 1890	C. H. Shacklady	Troy	Blue paper 18.8 and white paper 20 per cent short weight; fair.
2241	June	27, 1890	D. F. Magill	Troy	Blue paper 28.2 and white paper 20 per cent short weight; inferior.
2242	June	27, 1890	J. M. Donnelly	Troy ..	Blue paper 13.2 and white paper 40 per cent short weight; inferior.
2243	June	27, 1890	W. H. Wilkinson	Troy	Blue paper 18.1 and white paper 17 per cent short weight; fair.
2244	June	27, 1890	C. H. Bosworth	Troy	Blue paper 12.5 and white paper 25.7 per cent short weight; inferior.
2245	June	27, 1890	A. M. Knowlson	Troy	Good weight and quality.

BROMIDE OF SODIUM—(*Sodii Bromidum*, *U. S. P.*).

Twenty-three samples examined, of which there were of good quality seven; fair, ten, and inferior, six. The samples reported as fair and inferior possessed too great alkalinity or contained too large quantities of iodate, bromate or carbonate. The following is a list of the samples:

BROMIDE OF SODIUM, *U. S. P.*

Number of sample.	Date of collection.	OF WHOM PURCHASED.	Where purchased.	Quality.
1925	January	R. N. Peck	Glens Falls	Inferior.
1926	January	Sanford & Pearsall	Glens Falls	Inferior.
1927	January	J. L. Dolan	Glens Falls	Fair.
1928	January	C. P. Callen	Glens Falls	Good.
2018	April	W. J. Miller	Hudson	Fair.
2019	April	Link & Best	Hudson	Good.
2020	April	Rosman & McKinstry	Hudson	Good.
2021	April	Rice Bros.	Hudson	Good.
2046	April	P. B. Van Slyck	Valatie	Fair.
2083	April	A. Clark	Poughkeepsie	Fair.
2084	April	C. S. Bowne	Poughkeepsie	Fair.
2085	April	Humphrey & Forman	Poughkeepsie	Fair.
2086	April	F. C. Bolton	Poughkeepsie	Fair.
2087	April	Barnes Bros.	Poughkeepsie	Fair.
2088	April	Doty & Humphrey	Poughkeepsie	Inferior.
2089	April	C. Westervelt	Poughkeepsie	Good.
2090	April	Wilkinson, Roberts & Co	Poughkeepsie	Fair.
2091	April	Baldwin & Raymond	Poughkeepsie	Inferior.

2127	April	24, 1890	H. B. Bevier	Matteawan	Inferior.
2128	April	24, 1890	B. F. Greene	Matteawan	Good.
2169	April	24, 1890	T. Merritt	Newburgh	Fair.
2170	April	24, 1890	D. Kingston	Newburgh	Inferior.
2171	April	24, 1890	I. Caldwell	Newburgh	Good.

PRECIPITATED SULPHUR—(*Sulphur Precipitatum, U. S. P.*).

Thirty-seven samples examined, of which only nine were of good quality; one was of fair quality; twenty-two were of inferior quality, containing large quantities of sulphate of lime; while four consisted of washed sulphur and one of sublimed sulphur ignorantly or carelessly sold for precipitated sulphur. Concerning this article I quote from my last annual report: "The sale of common *lac sulphur* for the officinal precipitated sulphur is entirely inexcusable. It is loaded with sulphate of lime, and since precipitated sulphur of good quality is easily obtainable in the market, at a slightly higher price, this substitution ought never to be made; but the above results show that the proper article was sold in but about one-quarter of the cases. Pharmacists ought to be familiar with the various grades of the medicinal articles in which they deal, and a good result will be accomplished if, by calling attention to errors of this kind, an improvement in this respect can be brought about. The tests by which genuine precipitated sulphur can be distinguished from the impure commercial article are laid down in the Pharmacopœia, and are easily applied by the retailer. In this case, however, he hardly needs even to make a test, for the price he pays and name under which he buys sufficiently indicate the quality of the article supplied him." It is not a question whether the article is one of prime importance or not, but whether a drug largely adulterated with inert mineral matter ought to be sold for medicinal uses when a pure one is easily obtainable. The following table gives a description of the samples:

PRECIPITATED SULPHUR, U. S. P.

Number of Sample.	Date of collection.	OF WHOM PURCHASED.	Where purchased.	Quality.
1904	December 31, 1889	W. L. DuBois	Catskill	Largely adulterated with sulphate of lime; acid; inferior quality.
1938	January 29, 1890	Smalley & Co	Sandy Hill	Largely adulterated with sulphate of lime; inferior quality.
1957	January 29, 1890	J. M. Colcord	Saratoga Springs ..	Largely adulterated with sulphate of lime; inferior quality.
1958	January 29, 1890	T. H. S. Pennington.	Saratoga Springs ..	Largely adulterated with sulphate of lime; inferior quality.
1959	February 1, 1890	F. Menges	Saratoga Springs ..	Consists of washed sulphur; error in sale.
1969	February 1, 1890	J. H. Westcott	Ballston	Largely adulterated with sulphate of lime; inferior quality.
1970	February 1, 1890	F. E. Mitchell	Ballston	Good.
1993	February 1, 1890	W. W. Spaulding ..	Lausangburgh	Good.
2064	April 23, 1890	E. Holley, Jr.	Rhinebeck	Largely adulterated with sulphate of lime; inferior quality.
2065	April 23, 1890	B. N. Baker	Rhinebeck	Largely adulterated with sulphate of lime; inferior quality.
2066	April 23, 1890	Fero & Cotting	Rhinebeck	Consists of washed sulphur; error in sale.
2138	April 24, 1890	P. Greene	Fishkill-on-Hudson.	Largely adulterated with sulphate of lime; inferior quality.
2141	April 24, 1890	S. Mapes	Fishkill-on-Hudson.	Largely adulterated with sulphate of lime; inferior quality.
2173	April 24, 1890	W. Doderer	Newburgh	Largely adulterated with sulphate of lime; inferior quality.

PRECIPITATED SULPHUR, U. S. P.—(Concluded).

Number of sample.	Date of collection.	OF WHOM PURCHASED.	Where purchased.	Quality.
2174	April 24, 1890	I. C. Chapman.....	Newburgh	Largely adulterated with sulphate of lime; inferior quality.
2175	April 24, 1890	J. A. Joslin	Newburgh	Largely adulterated with sulphate of lime; inferior quality.
2176	April 24, 1890	T. Merritt	Newburgh	Good.
2177	April 24, 1890	J. G. Birch	Newburgh	Good.
2178	April 24, 1890	I. Caldwell	Newburgh	Good.
2179	April 24, 1890	F. A. Grenzebach ..	Newburgh	Largely adulterated with sulphate of lime; inferior quality.
2270	September 4, 1890	Lake & Coon.....	Utica	Good.
2271	September 4, 1890	G. O. Pennock.....	Utica	Consists of sublimed sulphur; error in sale.
2272	September 4, 1890	G. B. Williams	Utica	Largely adulterated with sulphate of lime; inferior quality.
2273	September 4, 1890	G. L. Hill.....	Utica	Good.
2277	September 4, 1890	Kellogg & Carrier ..	Frankfort	Largely adulterated with sulphate of lime; inferior quality.
2283	September 4, 1890	E. M. Draper.....	Ilion	Largely adulterated with sulphate of lime; inferior quality.
2289	September 5, 1890	L. H. Hollon	Herkimer	Consists of washed sulphur; error in sale.
2290	September 5, 1890	C. W. Palmer & Co..	Herkimer	Largely adulterated with sulphate of lime; inferior quality.
2291	September 5, 1890	Prowse & Thomson ..	Herkimer	Good.
2314	September 6, 1890	Martin & Shinman ..	Fort Plain	Largely adulterated with sulphate of lime; inferior quality.

2315	September 6, 1890	E. S. Gregory	Fort Plain	Consists of washed sulphur; error in sale.
2316	September 6, 1890	Devoe & Shumway..	Fort Plain	Largely adulterated with sulphate of lime; inferior quality.
2320	September 6, 1890	S. Walrath.....	St. Johnsville	Good.
2321	September 6, 1890	C. Whyland.....	St. Johnsville	Largely adulterated with sulphate of lime; inferior quality.
2404	November 10, 1890	W. W. Spaulding ...	Lansingburgh	Fair.
2405	November 10, 1890	J. H. Adams.....	Lansingburgh	Largely adulterated with sulphate of lime; inferior quality.
2406	November 10, 1890	H. W. Wood	Lansingburgh	Largely adulterated with sulphate of lime; inferior quality.

WASHED SULPHUR—(*Sulphur Lotum*, U. S. P.).

Eighteen samples examined, of which fourteen were of good quality; one was of inferior quality, not being washed at all, but possessing all the natural acidity of the common flowers of sulphur, and two consisted of precipitated sulphur of good and one of precipitated sulphur of inferior quality, sold through ignorance or carelessness for washed sulphur, which was called for in writing. I quote from my last annual report: "Washed sulphur is one of the articles which has been selected for examination, not because it is a very important drug, but to test the carefulness and reliability of the dealer. The natural acidity of commercial sublimed sulphur, or flowers of sulphur, is removed by treatment with ammonia and subsequent washing, and as it is easily prepared by the retailer, or obtained from reliable dealers, there is no reason why another article should be substituted for it, or an impure article be sold." The following table gives a description of the samples:

WASHED SULPHUR, U. S. P.

Number of sample.	Date of collection.	OF WHOM PURCHASED.	Where purchased.	Quality.
1878	December 30, 1889	W. Laycock.....	Kingston	Inferior.
1879	December 30, 1889	Van Deusen Bros	Kingston	Consists of precipitated sulphur; error in sale.
1880	December 30, 1889	Cooper & Hardenburgh	Kingston	Good.
1881	December 30, 1889	Spore & Eltinge	Kingston	Consists of precipitated sulphur; error in sale.
1956	January 29, 1890	C. F. Fish	Saratoga Springs ..	Good.
2022	April 1, 1890	W. J. Miller	Hudson	Good.
2023	April 1, 1890	Link & Best	Hudson	Good.
2024	April 1, 1890	Rosman & McKinstry ..	Hudson	Good.
2025	April 1, 1890	Rice Bros	Hudson	Good.
2054	April 2, 1890	J. Van Buren	Castleton	Good.
2055	April 2, 1890	C. W. Knowlton	Castleton	Good.
2096	April 23, 1890	A. Clark	Poughkeepsie	Consists of precipitated sulphur; inferior quality; error in sale.
2185	April 24, 1890	F. A. Grenzebach	Newburgh	Good.
2349	October 14, 1890	G. E. Duryee	Schenectady	Good.
2350	October 14, 1890	N. H. Kittle	Schenectady	Good.
2351	October 14, 1890	H. A. Kerste	Schenectady	Good.
2383	November 5, 1890	J. Higgins & Co	Waterford	Good.
2384	November 5, 1890	M. Barkman & Co	Waterford	Good.

DILUTED SULPHURIC ACID—(*Acidum Sulphuricum Dilutum, U. S. P.*).

Seventy samples examined, of which fifty were of good quality, six were of fair and three of inferior quality, while eleven possessed excessive strength. The diluted acid of the Pharmacopœia should contain ten per cent of the officinal sulphuric acid and have a specific gravity of about 1.067. These samples varied from 3.60 to 21.90 per cent. Excluding the eleven samples of excessive strength the average for the remainder was 10.25 per cent. For standards employed in rating these and other diluted acids, except acetic, see under diluted hydrobromic acid. The following table gives a description of the samples examined:

DILUTED SULPHURIC ACID, U. S. P.

Number of sample.	Date of collection.	OF WHOM PURCHASED.	Where purchased.	Per cent.	Quality.
1891	December 31, 1889	J. H. Vosburgh	Catskill	9.50	Good.
1892	December 31, 1889	W. L. DuBois	Catskill	19.50	Excessive strength.
1921	January 29, 1890	Ames & Baldwin	Glens Falls	9.10	Good.
1922	January 29, 1890	Leggett & Bush	Glens Falls	11.00	Good.
1923	January 29, 1890	Sanford & Pearsall	Glens Falls	9.60	Good.
1934	January 29, 1890	Flood & Kingsley	Sandy Hill	10.10	Good.
1999	March 28, 1890	Wardle & Son	Hudson	9.80	Good.
2000	March 28, 1890	J. M. Johnson	Hudson	7.50	Fair.
2001	March 28, 1890	B. Stedman	Hudson	9.20	Good.
2002	March 28, 1890	Rossmann & McKinstry	Hudson	9.40	Good.
2003	March 28, 1890	Van Tassel & Tobey	Hudson	10.10	Good.
2037	April 1, 1890	Rice Bros. & Baringer	Chatham	10.30	Good.
2038	April 1, 1890	W. H. Barnes	Chatham	9.20	Good.
2039	April 1, 1890	A. J. Fellows	Chatham	9.50	Good.
2070	April 23, 1890	A. Clark	Poughkeepsie	10.20	Good.
2071	April 23, 1890	C. S. Bowne	Poughkeepsie	9.80	Good.
2072	April 23, 1890	Humphrey & Forman	Poughkeepsie	18.50	Excessive strength.
2073	April 23, 1890	E. C. Bolton	Poughkeepsie	17.20	Excessive strength.
2074	April 23, 1890	Barnes Bros	Poughkeepsie	9.40	Good.
2075	April 23, 1890	Doty & Humphrey	Poughkeepsie	8.80	Fair.
2076	April 23, 1890	C. Westervelt	Poughkeepsie	11.20	Good.
2077	April 23, 1890	Wilkinson, Roberts & Co	Poughkeepsie	21.90	Excessive strength.
2078	April 23, 1890	A. A. & J. W. Goetchus	Poughkeepsie	12.50	Good.
2079	April 23, 1890	W. F. Turner	Poughkeepsie	14.00	Excessive strength.

DILUTED SULPHURIC ACID, U. S. P.—(Concluded).

Number of sample.	Date of collection.	OF WHOM PURCHASED.	Where purchased.	Per cent.	Quality.
2122	April 24, 1890	H. B. Bevier	Matteawan	12.50	Good.
2123	April 24, 1890	B. F. Greene	Matteawan	9.70	Good.
2124	April 24, 1890	E. H. Ellis	Matteawan	12.50	Good.
2146	April 24, 1890	W. Doderer	Newburgh	12.50	Good.
2147	April 24, 1890	I. C. Chapman	Newburgh	10.60	Good.
2148	April 24, 1890	J. G. Birch	Newburgh	12.50	Good.
2149	April 24, 1890	I. Caldwell	Newburgh	11.60	Good.
2150	April 24, 1890	F. A. Grenzebach	Newburgh ..	12.50	Good.
2151	June 27, 1890	H. Gnadendorff	Troy	12.50	Good.
2216	June 27, 1890	R. H. Starbuck	Troy	17.40	Excessive strength.
2217	June 27, 1890	Drake & Moffitt	Troy	12.50	Good.
2218	June 27, 1890	G. W. Holcomb	Troy	8.70	Fair.
2219	June 27, 1890	F. M. Brower	Troy	12.00	Good.
2220	June 27, 1890	Moncrief & Francis	Troy	6.60	Inferior.
2221	June 27, 1890	E. W. Stoddard	Troy	9.40	Good.
2222	June 27, 1890	H. Schneider	Troy	14.00	Excessive strength.
2223	June 27, 1890	C. H. Wiberley	Troy	9.60	Good.
2224	June 27, 1890	C. H. Shacklady	Troy	11.40	Good.
2225	June 27, 1890	D. F. Magill	Troy	12.50	Good.
2226	June 27, 1890	J. M. Donnelly	Troy	11.60	Good.
2227	June 27, 1890	W. H. Wilkinson	Troy	8.80	Fair.
2228	June 27, 1890	C. H. Bosworth	Troy	17.40	Excessive strength.
2229	June 27, 1890	A. M. Knowlson	Troy	12.40	Good.
2276	September 4, 1890	E. Steele	Frankfort	3.60	Inferior.

2282	September 4, 1890	D. E. Walker	Ilion	12.50	Good.
2287	September 5, 1890	L. H. Hollon	Herkimer	12.50	Good.
2288	September 5, 1890	Prowse & Thomson	Herkimer	11.20	Good.
2296	September 5, 1890	H. G. Babcock & Co	Little Falls	12.50	Good.
2297	September 5, 1890	A. Woolever	Little Falls	10.60	Good.
2298	September 5, 1890	J. V. Hemstreet	Little Falls	9.60	Good.
2307	September 5, 1890	W. S. Bellinger	Canajoharie	10.40	Good.
2308	September 5, 1890	Dygart & Wohlgemuth	Canajoharie	10.20	Good.
2309	September 5, 1890	A. M. Hodge	Canajoharie	10.00	Good.
2333	October 14, 1890	C. W. Striker	Amsterdam	7.60	Fair.
2342	October 14, 1890	G. Duryee	Schenectady	19.00	Excessive strength.
2343	October 14, 1890	W. Sauter	Schenectady	10.00	Good.
2344	October 14, 1890	G. Steinfuhrer	Schenectady	20.00	Excessive strength.
2345	October 14, 1890	W. T. Hanson & Co	Schenectady	8.80	Fair.
2346	October 14, 1890	A. T. Veeder & Son	Schenectady	9.20	Good.
2347	October 14, 1890	Van Zandt & Shaffer	Schenectady	6.00	Inferior.
2348	October 14, 1890	C. H. Horstman	Schenectady	9.40	Good.
2382	November 5, 1890	M. Barkman & Co	Waterford	10.10	Good.
2397	November 10, 1890	J. E. Grady	Green Island	10.50	Good.
2401	November 10, 1890	W. W. Spaulding	Lansingburgh	12.00	Good.
2402	November 10, 1890	J. H. Adams	Lansingburgh	9.20	Good.
2403	November 10, 1890	H. W. Wood	Lansingburgh	16.20	Excessive strength.

WATER ANALYSES.

During the past year seven samples of water have been examined as follows :

No. 69. Well at Mattetuck. Preliminary test.

No. 70. Water from Constableville. Source not stated.

No. 71. Fishkill Water Company's supply.

Nos. 72 and 73. Waverley Water Company's supply.

No. 74. Well at Voorheesville.

No. 75. Well at New Windsor.

Some preliminary tests only were made of No. 69, and the results in the case of No. 70 were vitiated by the keg in which the water was sent not being clean. Sample No. 73 was too small to admit of full analysis, but was similar in character to No. 72. The results of the analysis of the other samples were as follows :

RESULTS PARTS PER 100,000.

	No. 71.	No. 72.	No. 74.	No. 75.
Color.....	Greenish-yellow ..	Yellowish	Nearly colorless ..	Nearly colorless.
Odor	Very slight.....	Very slight.....	None	Slightly unpleasant.
Chlorine.....	0.20.....	0.20.....	2.20.....	0.40
Nitrites.....	None	None	Trace.....	Present.
Free ammonia...	0.0028.....	0.0036.....	0.0020.....	0.0085
Albuminoid ammonia	0.0138.....	0.0160.....	0.0085.....	0.0135
Total solids	4.50....	8.20.....	36.40.....	18.10
Loss on ignition.....	2.40.....	2.60.....	15.60.....	5.10
Mineral matter.....	2.10.....	5.60.....	20.80.....	13.00

MISCELLANEOUS EXAMINATIONS.

A fire at No. 64 Hudson avenue, Albany, alleged to have resulted from the explosion of a kerosene lamp, was investigated February tenth and a sample of the oil said to have been such as was used in the lamp was tested and found to flash at 102 degrees Fahr. The accident probably resulted from carelessness.

A sample of buckwheat flour suspected of being adulterated with mineral matter of some kind was examined February twenty-sixth, and found to yield but 0.32 per cent of ash. Microscopical examination failed to reveal adulteration of any kind.

Two samples of sewage from the Soldier's Home at Bath were analyzed in May. The report upon the same is appended :

ALBANY, May 7, 1890.

Dr. LEWIS BALCH, *Secretary State Board of Health, Albany :*

DEAR SIR.— May 2, 1890, I received from Professor Maurice Perkins, of the State Board of Health, two samples of sewage from the Soldiers' Home at Bath, Steuben county, N. Y., one "as it entered the Powers' system, and the other as it left." No. 1 was labeled "Crude; taken from inlet," and No. 2, "Clear; taken from outlet." A letter from Professor Perkins which accompanied the samples stated : "What we want to know is how much of the sewage is removed?" The results of the examination show that very little is removed in a strictly chemical sense. Some improvement, such as an imperfect filtration might have accomplished is, indeed, shown, but the organic matter, though diminished in quantity has not been destroyed. No. 2 is as much sewage as No. 1; the only material difference being that it is somewhat less rank and offensive. The analytical results are as follows, all determinations having been made upon the shaken sewage so that it might contain the sediment.

ALL RESULTS PARTS PER 100,000.

	No. 1 (from inlet).	No. 2 (from outlet).
Color and appearance	Turbid; blackish-green. Considerable suspended matter and sediment.	Turbid; greenish-brown. Less sediment than No. 1.
Odor	Highly offensive.....	Very disagreeable.
Chlorine	4.80.....	5.20.
Free ammonia.....	4.1600.....	2.0800.
Albuminoid ammonia.....	0.3780.....	0.1480.
Nitrogen in nitrites and nitrates..	Very low.....	Very low.
Total solids	48.20.....	37.10.
Loss on ignition.....	23.90.....	13.90.
Behavior during ignition	Blackening; very unpleasant odor.....	Blackening; unpleasant odor.
Mineral matter.....	24.30.....	23.20.

The chlorides and total solids in the above are rather low for ordinary sewage. The free and albuminoid ammonia are probably not far from the average. No. 2 showed a trace of nitrites, but nitrites and nitrates are generally very low if not entirely absent in fresh sewage. In these samples the amount was too small to be determined satisfactorily.

Yours respectfully.

WILLIS G. TUCKER,

Analyst.

A sample of bromide of potassium suspected of being adulterated was examined October thirtieth, and found to be neither better nor worse than much now on the market. It was free from the bromate and iodide, but containing carbonate, sulphate and decided traces of the sodium salt, and was too strongly alkaline.

Two samples of candy thought to be impure were examined by Mr. E. J. Wheeler at my request in November, who reported that No. 1 contained sulphate of calcium, and that No. 2 contained of glucose 3.6 and of cane sugar 92.5 per cent. Dried at 100 degrees C., it lost 1.45 per cent, and it yielded 0.055 per cent of ash. It contained a small quantity of starch.

A sample of maple syrup from Bainbridge, thought to contain some poisonous or deleterious constituent, was examined December twenty-sixth. No metallic impurity or poisonous matter was detected.

Since September 1, 1885, when work was begun upon the present plan, 2,406 samples of drugs have been examined by me, being an average of thirty-nine samples for each month during which the work has been carried on. During the past year a number of second samples have been collected from dealers, whose goods had been found on previous occasions to be of inferior quality, and in the majority of instances these have been found to be of satisfactory quality, showing that the first notification had been heeded. The work in which we have been engaged continues to receive the hearty approval and support both of leading manufacturers and dealers and of the prominent journals of pharmacy and pharmaceutical associations, and is believed to have had a very decided influence in raising the standard of quality of drugs sold throughout the State. It is advised that the work be continued during the coming year upon essentially the same plan as

that pursued in the past, and that new localities be visited and a still greater variety of samples be collected. I desire again to express the opinion that the greater number of mistakes which are made by pharmacists result from ignorance or carelessness rather than from a deliberate intent to deceive or defraud, or willful determination to transgress the law, and that the information and warning received through the notifications of the board are sufficient, in the great majority of cases, to secure the desired reform without a resort to legal proceedings. If articles were purchased for analysis indiscriminately from the whole range of the pharmacopœia, I have no doubt that a decided improvement in the quality of drugs sold throughout the State would be observed from year to year, and if the successive reports seem to show no apparent diminution in the ratio of adulterated or impure drugs to those of good quality which are offered for sale, it is to be remembered that only those articles which are considered most likely to be of inferior quality are collected for examination.

Respectfully submitted.

WILLIS G. TUCKER,

Analyst.

CHEMICAL LABORATORY OF THE ALBANY MEDICAL COLLEGE,
ALBANY, N. Y., *January 1, 1891.*

